I Claim:

1. A method for automated convergence of an image projected by at least two modulators, the method comprising:

turning on a grid pattern of pixels in said projected image;

capturing an image of said pixels at an intersection of said grid pattern;

separating each said captured image into a separate image for each modulator;

selecting a test pixel in each of said separated captured images;

determining the x and y location at center of said test pixels;

using the x and y locations of one said test pixels of one separated image as a reference, calculating the x and y convergence mis-alignment for the test pixels of the other separated images; and

repeating convergence procedure for at least one other location across the field-of-view of said projected image.

2. The method of Claim 1 whereby said projected image is generated by means of at least three spatial light modulators.

3. The method of Claim 1 wherein one of said captured test images is located in the center of said projected image; and

at least four additional captured images are located near the perimeter of said projected image.

4. The method of Claim 1 whereby average x and y pulses representing said test pixel's width and height are generated by taking at least 20 scans in both horizontal and vertical direction across said test pixel.

5. The method of Claim 4 whereby the pulse-height of said horizontal and vertical pulses is normalized to a maximum level.

6. The method of Claim 5 whereby said test pixel width and height is determined by measuring the width of said normalized pulses at the 90% amplitude level.

7. The method of Claim 1, said measuring and determining steps comprising:

locating the 90% amplitude level of said pulse's leading edge;

locating the 90% amplitude level of said pulse's trailing edge; and

setting the center point as the mid-point between said 90% level of leading edge and 90% level of trailing edge.

8. A method for the automated focus of a projected image comprising the steps of:

forming a projected image having a grid pattern;

measuring a focus by:

capturing an image at an intersection of said grid pattern;

separating said captured image into single modulator images;

taking a fast-Fourier-transform using said single modulator images;

normalizing said fast-Fourier-transform data;

deriving a power spectrum array for said single modulator images from said normalized fast-Fourier-transform data; and

summing said power spectrum array elements to the right of the first relative minima in said spectrum;

adjusting optics used to form said projected image; and

repeating said steps to maximize said power spectrum summation.

9. The method of Claim 8 wherein:

one of said captured images is located in the center of said projected image; and

at least four additional captured images are located near the perimeter of said projected image.

10. An apparatus for the automatic convergence and focus of a projected image, comprising:

at least three CCD cameras operable to capture portions of a grid image;

a video multiplexer receiving an output from each of said CCD cameras;

a frame grabber receiving an output from said video multiplexer; and

a computer receiving image data from said frame grabber, said computer separating said captured image data into a separate image for each modulator used for form said projected image and using said separated images for convergence and focus measurements.

11. The apparatus of Claim 10 wherein one of captured images is located in the center of said projected image and at least four additional captured images are located near a perimeter of said projected image.

12. The apparatus of Claim 10 wherein said computer calculates the convergence a projected image by:

selecting a test pixel from each separated image;

determining the x and y center location of each said test pixel; and

using the x and y center location of one test pixel as a reference, calculating the x and y convergence mis-alignment for the other test pixels.

13. The apparatus of Claim 12 wherein average x and y pulses representing said test pixel's width and height are generated by taking at least 20 scans in both horizontal and vertical direction across said test pixel.

14. The apparatus of Claim 12 wherein said separated captured images are normalized to maximum level.

15. The apparatus of Claim 14 wherein said test pixel width and height is determined by measuring the width of said normalized pulses at the 90% amplitude level.

16. The apparatus of Claim 15 wherein said width of normalized pulses is determined by:

locating the 90% amplitude level of said pulse's leading edge;

locating the 90% amplitude level of said pulse's trailing edge; and

measuring said pulse's pulse-width between said 90% level of leading edge and 90% level of trailing edge.

17. The apparatus of Claim 16 wherein said test pixel's x and y center location is taken as the mid-point of said horizontal and vertical pulse-width measurements.

18. The apparatus of Claim 10, said computer determining focus by:

selecting a test pixel for each separated image;

taking a fast-Fourier-transform using data from said separated images;

normalizing said fast-Fourier-transform data;

deriving a power spectrum array for said separated images from said normalized fast-Fourier-transform data; and

summing said power spectrum array elements to the right of the first relative minima in said spectrum.

19. The method of Claim 18 said computer determining an optimal focus of said projected image by repetitively measuring said focus and adjusting an optic use to project said image to maximize said power spectrum sum.